IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Morgan William Amos DAVID et al.

U.S. Serial No.: Filed Concurrently Herewith

Continuation of
International Appln. No.: PCT/GB01/01458

International Filing Date: 30 March 2001

Priority Date Claimed: 5 April 2000

Title of Invention: IDENTIFYING, RECORDING AND REPRODUCING
INFORMATION

745 Fifth Avenue
New York, NY 10151

PRELIMINARY AMENDMENT

U.S. Patent and Trademark Office
Box Patent Application (35 U.S.C. 111)
P.O. Box 2327
Arlington, VA 22202

Sir:

Before the issuance of the first Office Action, please amend the above-identified

application as follows:

IN THE SPECIFICATION:

Page 1, before line 1, add the following:

--This is a continuation of copending International Application PCT/GB01/01458 having

an international filing date of 30 March 2001.--

IN THE CLAIMS:

Cancel claims 89-101.

Amend claims 3-6, 8-9, 12-15, 18, 19, 21, 22, 25, 26, 28, 36, 40, 41, 55, 56, 59, 61, 63-

66, 71, 72, 76, 77, 79, 81 and 83-88 to read as follows:

3.   (Amended)   A system according to claim 1, wherein a third identifier

identifying the machine which initially produces the video and/or audio material is produced and

the second generator associates the second identifiers with the medium identifier and the first

identifiers and the third identifiers in combination.

4.   (Amended)   A system according to claim 1, wherein the second identifiers are

UMIDs.

5.   (Amended)   A system according to claim 1, wherein the first identifiers are

recorded on the medium.

6.   (Amended)   A system according to claim 1, wherein the first identifiers

comprise material reference numbers.

8.   (Amended)   A system according to claim 1, wherein the medium identifier is

recorded on the medium.

9.   (Amended)   A system according to claim 1, wherein the medium is contained in

a housing .

12.   (Amended)   A system according to claim 3, having a data store supported by the housing and additional to the medium; and wherein the third identifier is recorded in the said data store.

13.   (Amended)   A system according to claim 9, wherein the housing has a label on which data may be written.

14.   (Amended)   A system according to claim 2, wherein the medium is contained in a housing and wherein the medium identifier is written on the housing.

15.   (Amended)   A system according to claim 1, further comprising a database processor arranged to associate the second identifiers with at least the first identifiers or with the first identifiers and one or more of the medium identifiers and the third identifiers.

18.   (Amended)   A recorder according to claim 16, for recording material on a medium contained in a housing which supports a data store additional to the medium, and including a data recording device for recording at least a medium identifier in the data store.

19.   (Amended)   A recorder according to claim 17, wherein the data recording device is arranged to record at least one of the first identifiers in the data store.

21.   (Amended)   A recorder according to claim 17 wherein the recorder is arranged to produce a machine identifier identifying the recorder and to record the machine identifier on the medium and/or in the data store.

22.   (Amended)   A recorder according to claim 18, wherein the recorder is arranged to produce a machine identifier identifying the recorder and to record the machine identifier on the medium and/or in the data store and wherein the recorder is arranged to record the machine identifier in the data store.

25.   (Amended)   A device according to claim 23 wherein the device reproduces a medium ID identifying the recording medium from the medium and / or from a data store associated with the medium.

26.   (Amended)   A device according to claim 23, wherein the device reproduces the material identifer from the medium and / or from a data store associated with the medium.

28.   (Amended)   A device according to claim 23, wherein the second identifier generator is arranged to derive UMIDs from one or more of tape ID, machine ID, and MURN

36.   (Amended)   A computer pogram product arranged to implement the method of claim 33, when run on a digital signal processor.

40.   (Amended)   A recorder according to claim 38, in which the material identifying code is larger than the user data bits available in a single timecode, so that each instance of the material identifying code is recorded across the user bits of time codes relating to more than one field of the video material.

41.   (Amended)   A recorder according to claim 38, in which the material identifying code is a code which uniquely defines the material amongst other material items stored on the same medium.

55.   (Amended)   A recording apparatus as claimed in claim 52, wherein said plurality of adjacent cells associated with the same category are recorded along a linear axis of the recording medium.

56.   (Amended)   A recording apparatus as claimed in claim 47, wherein the control processor is arranged in operation to

- form metadata packets having a plurality of fields, and

- control said recording drive to record said metadata packets on to said linear recording medium, whereby said metadata objects are repeated said pre-determined number of times.

59.   (Amended)   A recording apparatus as claimed in claim 56, wherein the control processor is arranged in operation to

- provide each of said metadata packets with a header field, and

- allocate header information to said header field, which header information is indicative of the metadata objects within the fields of the packet.

61.   (Amended)   A recording apparatus as claimed in claim 46, wherein said linear recording medium is a magnetic tape, and the recording drive has

- a rotating head which is configured in operation to record said information signals in helical scan tracks disposed at an angle to a linear axis of said recording tape, and

-    a linear recording head which is configured in operation to record said metadata in linear tracks of said magnetic tape at a position adjacent to said helical scan tracks.

63.   (Amended)   A reproducing apparatus which is arranged in operation to recover audio and/or video information signals recorded with metadata associated with the information signals on to a linear recording medium using a recording apparatus claimed in claim 46, said reproducing apparatus comprising

- reading drive which operates to recover the information signals from the linear recording medium, and the metadata from the linear recording medium, and

- a read control processor which is arranged in operation to determine whether the same metadata has been read by the reading drive from the linear recording medium, to discard the metadata which has been read more than once, and to reproduce said information signals with said metadata.

64.   A reproducing apparatus as claimed in claim 63, wherein the read control processor is configured in operation

- to determine an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- to determine which of the categories of relative importance the metadata objects read from said linear receding medium were assigned when recorded,

5

- to determine the number of times metadata objects in each category have been repeatedly recorded,

- to calculate a number of said metadata objects which will be the same metadata object read from said category in dependence upon said amount by which said reading rate is greater than said recorded rate and the pre-determined number of times the metadata objects have been repeatedly recorded in the category, and

- to select one of the metadata objects from the calculated number of metadata objects read with reference to the temporal marker which are the same.

65.   (Amended)   A reproducing apparatus claimed in claim 64, wherein the reading drive is arranged in operation to read metadata packets successively from said linear recording medium, and the read control processor is arranged in operation

- to recover from the packet header of each packet said header information,

- to determine from said successive packets whether the corresponding header information has changed from one packet to a subsequent packet,

- to determine an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- to determine whether more than one packet has the same header,

- to calculate a number of said metadata packets read from said recording medium which will be the same since said header information has changed in dependence upon said determined amount by which said reading rate is greater than said recorded rate, and

- to select one of the metadata packets from the calculated number of metadata packets read which are the same.

66.   (Amended)   A recording/reproducing apparatus as claimed in claim 63, wherein said recording drive and said reading drive are formed as a recording/reading drive, and said control processor and said reading control processor are formed as a reading/reproducing processor.

71.   (Amended)   A method as claimed in claim 68, wherein the step of recording said metadata on to said linear recording medium comprises recording said metadata on to said

6

recording medium whereby said metadata may be separated from said information signals when read from said recording medium.

72. (Amended)   A method as claimed in claim 68, wherein each of said metadata objects are assigned to one of a plurality of categories of relative importance, and the step of repeat recording said metadata objects comprises the steps of

- allocating each of said metadata objects to one of said categories of relative importance, and

- repeat recording said metadata objects in accordance with the allocated category, the number of times the metadata object is repeat recorded being pre-determined for said category.

76. (Amended)   A method as claimed in claim 75, wherein said plurality of adjacent cells associated with the same category are recorded along a linear axis of the recording medium.

77. (Amended)   A method as claimed in claim 72, wherein the step of repeat recording said metadata objects comprises the steps of

- forming metadata packets having a plurality of fields,

- allocating the metadata objects to the fields of at least one of the packets, whereby the metadata object is repeated in the fields of the at least one packet said determined number of times, and

- recording said at least one metadata packet.

79. (Amended)   A method as claimed in claim 77, wherein the step of forming said metadata packet comprises the steps of

- providing each of said metadata packets with a header field, and

- allocating header information to said header field, which header information is indicative of the metadata objects within the fields of the packet.

81. (Amended)   A method as claimed in claim 68, wherein said linear recording medium is a magnetic tape, and the step of recording said information signals comprises the

steps of

- recording said information signals using a rotating head whereby said information signals are recorded in helical scan tracks disposed at an angle to a linear axis of said recording tape, and the step of recording said metadata comprises the step of

- recording the metadata using a linear recording head along said linear tracks of said magnetic tape at a position adjacent to said helical scan tracks.

83.   (Amended)   A method of reproducing information signals recorded with metadata associated with the information signals on to a linear recording medium using the method of recording claimed in claim 68, comprising the steps of

- reading the information signals from the linear recording medium,

- reading the metadata from the linear recording medium,

- determining whether the same metadata has been read from the linear recording medium during the step of reading the metadata,

- discarding the metadata which has been read more than once, and

- reproducing said information signals with said metadata.

84.   (Amended)   A method of reproducing as claimed in claim 83, wherein the step of reading the metadata comprises the steps of

- determining an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- determining which of the categories of relative importance the metadata objects read from said linear recording medium were assigned when recorded,

- determining the number of times metadata objects in the category has been repeatedly recorded,

- calculating a number of said metadata objects which will be the same metadata object read from said category after the temporal marker in dependence upon said determined amount by which said reading speed is greater than said recorded rate and the pre-determined number of times the metadata objects have been repeatedly recorded in the category, and the step of selecting and discarding the metadata comprises

- selecting one of the metadata objects from the calculated number of metadata objects

read which are the same.

85.   (Amended)   A method of reproducing information signals as claimed in claim 83, wherein the step of reading the metadata comprises the steps of

- reading each of said metadata packets successively from said linear recording medium, and

- recovering from the packet header of each packet said header information, and

- determining from said successive packets whether the corresponding header information has changed from one packet to a subsequent packet, and the step of determining whether the same metadata object has been read more than once from the recording medium comprises,

- determining an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- determining whether more than one packet has the same header,

- calculating a number of said metadata packets read from said recording medium which will be the same since said header information has changed in dependence upon said determined amount by which said reading speed is greater than said recorded rate, and the step of discarding the metadata comprises

- selecting one of the metadata packets from the calculated number of metadata packets read which are the same.

86.   (Amended)   A computer program providing computer executable instructions, which when loaded onto a computer configures the computer to operate as a recording apparatus as claimed in claim 46.

87.   (Amended)   A computer program providing computer executable instructions, which when loaded on to a computer causes the computer to perform the method according to claim 68.

88.   (Amended)   A computer program product having a computer readable medium recorded thereon information signals representative of the computer program claimed in claim 86.

Please add the following new claims 102-106:

--102. (New) A computer program product arranged to implement the method of claim

34 when run on a digital signal processor.--

--103. (New) A computer program product arranged to implement the method of claim

35 when run on a digital signal processor.--

--104. (New) A storage medium storing a computer program according to claim 102.--

--105. (New) A storage medium storing a computer program according to claim 103.--

--106. (New) A computer program product having a computer readable medium

recorded thereon information signals representative of the computer program claim in claim 87.

REMARKS

This amendment is made to provide proper reference to the International

application of which this is a continuation. See MPEP § 1895.01. The claims have been

amended to eliminate multiple claim dependencies. The filing fee has been calculated based

upon this Preliminary Amendment. The attached is captioned **"Version with markings to show**

changes made" and indicates the changes that have been made herein

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicants

By /s/ William S. Frommer

William S. Frommer
Reg. No. 25,506
Tel. (212) 588-0800

"Version with markings to show changes made"

IN THE CLAIMS:

Claims 3-6, 8, 9, 12-15, 18, 19, 21, 22, 25, 26, 36, 40, 41, 55, 56, 59, 61, 63-66, 71, 72, 76, 77, 79, 81 and 83-88 are amended as follows:

3.   A system according to claim 1 ~~or 2~~, wherein a third identifier identifying the machine which initially produces the video and/or audio material is produced and the second generator associates the second identifiers with the medium identifier and the first identifiers and the third identifiers in combination.

4.   A system according to claim 1, ~~2, 3 or 4,~~ wherein the second identifiers are UMIDs.

5.   A system according to claim 1, ~~2, 3, 4 or 5,~~ wherein the first identifiers are recorded on the medium.

6.   A system according to <u>claim 1</u> ~~any preceding claim~~, wherein the first identifiers comprise material reference numbers.

8.   A system according to <u>claim 1</u> ~~any one of claims 1 to 7~~, wherein the medium identifier is recorded on the medium.

9.   A system according to <u>claim 1</u> ~~any one of claims 1 to 8~~, wherein the medium is contained in a housing .

12.   A system according to claim <u>3, having a data store supported by the housing and additional to the medium; and</u> ~~9 or 10 when dependent on claim 3~~, wherein the third identifier is recorded in the said data store.

13.   A system according to <u>claim 9</u> ~~any one of claims 9 to 12~~, wherein the housing has a label on which data may be written.

A1

14. A system according to <u>claim 2, wherein the medium is contained in a housing and</u> ~~any one of claims 2 to 13~~, wherein the medium identifier is written on the housing.

15. A system according to <u>claim 1</u> ~~any preceding claim~~, further comprising a database processor arranged to associate the second identifiers with at least the first identifiers or with the first identifiers and one or more of the medium identifiers and the third identifiers.

18. A recorder according to claim 16 ~~or 17~~, for recording material on a medium contained in a housing which supports a data store additional to the medium, and including a data recording device for recording at least a medium identifier in the data store.

19. A recorder according to claim 17 ~~or 18~~, wherein the data recording device is arranged to record at least one of the first identifiers in the data store.

21. A recorder according to <u>claim 17</u> ~~any one of claims 17 to 20~~ wherein the recorder is arranged to produce a machine identifier identifying the recorder and to record the machine identifier on the medium and/or in the data store.

22. A recorder according to <u>claim 18, wherein the recorder is arranged to produce a machine identifier identifying the recorder and to record the machine identifier on the medium and/or in the data store and</u>~~21 when dependent on claim 18~~ wherein the recorder is arranged to record the machine identifier in the data store.

25. A device according to claim 23 ~~or 24~~ wherein the device reproduces a medium ID identifying the recording medium from the medium and / or from a data store associated with the medium.

26. A device according to claim 23~~, 24 or 25~~ wherein the device reproduces the material identifer from the medium and / or from a data store associated with the medium.

28.   A device according to claim 23 or 24, wherein the second identifier generator is arranged to derive UMIDs from one or more of tape ID, machine ID, and MURN.

36.   A computer pogram product arranged to implement the method of claim 33, 34 or 35 when run on a digital signal processor.

40.   A recorder according to claim 38 or claim 39, in which the material identifying code is larger than the user data bits available in a single timecode, so that each instance of the material identifying code is recorded across the user bits of time codes relating to more than one field of the video material.

41.   A recorder according to claim38, 39 or 40, in which the material identifying code is a code which uniquely defines the material amongst other material items stored on the same medium.

55.   A recording apparatus as claimed claim 52 in any of Claims 52 to 54, wherein said plurality of adjacent cells associated with the same category are recorded along a linear axis of the recording medium.

56.   A recording apparatus as claimed claim 47 in any of Claims 47 to 50, wherein the control processor is arranged in operation to
        - form metadata packets having a plurality of fields, and
        - control said recording drive to record said metadata packets on to said linear recording medium, whereby said metadata objects are repeated said pre-determined number of times.

59.   A recording apparatus as claimed claim 56 in any of Claims 56 to 58, wherein the control processor is arranged in operation to
        - provide each of said metadata packets with a header field, and
        - allocate header information to said header field, which header information is indicative of the metadata objects within the fields of the packet.

61.   A recording apparatus as claimed in <u>claim 46</u> ~~any one of claims 46 to 60~~, wherein said linear recording medium is a magnetic tape, and the recording drive has

- a rotating head which is configured in operation to record said information signals in helical scan tracks disposed at an angle to a linear axis of said recording tape, and

- a linear recording head which is configured in operation to record said metadata in linear tracks of said magnetic tape at a position adjacent to said helical scan tracks.

63.   A reproducing apparatus which is arranged in operation to recover audio and/or video information signals recorded with metadata associated with the information signals on to a linear recording medium using a recording apparatus claimed in <u>claim 46</u> ~~any preceding Claim~~, said reproducing apparatus comprising

- reading drive which operates to recover the information signals from the linear recording medium, and the metadata from the linear recording medium, and

- a read control processor which is arranged in operation to determine whether the same metadata has been read by the reading drive from the linear recording medium, to discard the metadata which has been read more than once, and to reproduce said information signals with said metadata.

64.   A reproducing apparatus as claimed in claim 63, ~~when dependent on Claims 6 to 10,~~ wherein the read control processor is configured in operation

- to determine an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- to determine which of the categories of relative importance the metadata objects read from said linear receding medium were assigned when recorded,

- to determine the number of times metadata objects in each category have been repeatedly recorded,

- to calculate a number of said metadata objects which will be the same metadata object read from said category in dependence upon said amount by which said reading rate is greater than said recorded rate and the pre-determined number of times the metadata objects have been repeatedly recorded in the category, and

- to select one of the metadata objects from the calculated number of metadata objects

read with reference to the temporal marker which are the same.

65.   A reproducing apparatus claimed in claim 64, ~~when dependent upon any one of Claims 56 to 62~~, wherein the reading drive is arranged in operation to read ~~each of said~~ metadata packets successively from said linear recording medium, and the read control processor is arranged in operation

- to recover from the packet header of each packet said header information,
- to determine from said successive packets whether the corresponding header information has changed from one packet to a subsequent packet,

- to determine an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- to determine whether more than one packet has the same header,

- to calculate a number of said metadata packets read from said recording medium which will be the same since said header information has changed in dependence upon said determined amount by which said reading rate is greater than said recorded rate, and

- to select one of the metadata packets from the calculated number of metadata packets read which are the same.

66.   A recording/reproducing apparatus ~~having a recording apparatus as claimed in any of Claims 46 to 62, and a reproducing apparatus~~ as claimed in claim 63, ~~any of Claims 63 to 65,~~ wherein said recording drive and said reading drive are formed as a recording/reading drive, and said control processor and said reading control processor are formed as a reading/reproducing processor.

71.   A method as claimed in <u>claim 68</u> ~~any of Claims 78 to 70~~, wherein the step of recording said metadata on to said linear recording medium comprises recording said metadata on to said recording medium whereby said metadata may be separated from said information signals when read from said recording medium.

72.   A method as claimed in <u>claim 68</u> ~~any of Claims 68 to 71~~, wherein each of said metadata objects are assigned to one of a plurality of categories of relative importance, and the

step of repeat recording said metadata objects comprises the steps of

- allocating each of said metadata objects to one of said categories of relative importance, and

- repeat recording said metadata objects in accordance with the allocated category, the number of times the metadata object is repeat recorded being pre-determined for said category.

76.   A method as claimed in either claim 72 or 75, wherein said plurality of adjacent cells associated with the same category are recorded along a linear axis of the recording medium.

77.   A method as claimed in claim 72 any of Claims 68 to 76, wherein the step of repeat recording said metadata objects comprises the steps of

- forming metadata packets having a plurality of fields,

- allocating the metadata objects to the fields of at least one of the packets, whereby the metadata object is repeated in the fields of the at least one packet said determined number of times, and

- recording said at least one metadata packet.

79.   A method as claimed in claims 77 or 78, wherein the step of forming said metadata packet comprises the steps of

- providing each of said metadata packets with a header field, and

- allocating header information to said header field, which header information is indicative of the metadata objects within the fields of the packet.

81.   A method as claimed in claim 68 any one of claims 46 to 80, wherein said linear recording medium is a magnetic tape, and the step of recording said information signals comprises the steps of

- recording said information signals using a rotating head whereby said information signals are recorded in helical scan tracks disposed at an angle to a linear axis of said recording tape, and the step of recording said metadata comprises the step of

- recording the metadata using a linear recording head along said linear tracks of said magnetic tape at a position adjacent to said helical scan tracks.

83.   A method of reproducing information signals recorded with metadata associated with the information signals on to a linear recording medium using the method of recording claimed in claim 68 ~~any of Claims 68 to 82~~, comprising the steps of

- reading the information signals from the linear recording medium,

- reading the metadata from the linear recording medium,

- determining whether the same metadata has been read from the linear recording medium during the step of reading the metadata,

- discarding the metadata which has been read more than once, and

- reproducing said information signals with said metadata.

84.   A method of reproducing as claimed in claim 83, ~~when dependent on Claims 27 to 31,~~ wherein the step of reading the metadata comprises the steps of

- determining an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- determining which of the categories of relative importance the metadata objects read from said linear recording medium were assigned when recorded,

- determining the number of times metadata objects in the category has been repeatedly recorded,

- calculating a number of said metadata objects which will be the same metadata object read from said category after the temporal marker in dependence upon said determined amount by which said reading speed is greater than said recorded rate and the pre-determined number of times the metadata objects have been repeatedly recorded in the category, and the step of selecting and discarding the metadata comprises

- selecting one of the metadata objects from the calculated number of metadata objects read which are the same.

85.   A method of reproducing information signals as claimed in claim 83, ~~when dependent upon Claims 77 to 82,~~ wherein the step of reading the metadata comprises the steps of

- reading each of said metadata packets successively from said linear recording medium, and

- recovering from the packet header of each packet said header information, and

- determining from said successive packets whether the corresponding header information has changed from one packet to a subsequent packet, and the step of determining whether the same metadata object has been read more than once from the recording medium comprises,

- determining an amount by which the reading rate is greater than the rate at which said information signals were recorded,

- determining whether more than one packet has the same header,

- calculating a number of said metadata packets read from said recording medium which will be the same since said header information has changed in dependence upon said determined amount by which said reading speed is greater than said recorded rate, and the step of discarding the metadata comprises

- selecting one of the metadata packets from the calculated number of metadata packets read which are the same.

86.   A computer program providing computer executable instructions, which when loaded onto a computer configures the computer to operate as a recording apparatus as claimed in claim 46 any of Claims 46 to 65.

87.   A computer program providing computer executable instructions, which when loaded on to a computer causes the computer to perform the method according to claims 68 to 85.

88.   A computer program product having a computer readable medium recorded thereon information signals representative of the computer program claimed in claim 8 86 or 87.